

## ELECTRONIC AMUSEMENT DEVICE AND METHOD FOR ENHANCED SLOT MACHINE PLAY

The present utility application claims the benefit of priority of the following  
5 U.S. Provisional Patent Applications:

Serial No. 60/445,473, filed on February 5, 2003,

Serial No. 60/447,265, filed on February 13, 2003,

Serial No. 60/447,350, filed on February 13, 2003,

10 Each of the above applications is incorporated herein by reference.

### BACKGROUND OF THE INVENTION

The present invention relates generally to electronic amusement devices.

Modern casinos offer players a wide variety of game alternatives, including  
15 table games such as craps, blackjack and poker. Slot machines, however, constitute the major source of profits for casinos. Casinos therefore constantly strive to increase the attractiveness and playability of slot machines in ways that attract and retain players.

More particularly, it is of substantial value to a casino to encourage  
20 lengthier and faster play sessions at slot machines. When a player terminates play and walks away from a slot machine, that machine often goes unused for some period of time until a new player initiates play, thereby reducing revenue from that slot machine. Further, the speed with which an active player operates a machine has a direct bearing on the profit of a machine; the faster a slot machine is played,  
25 the greater the profit that machine will generate for its owner.

### BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a block diagram illustrating a system for implementing an embodiment of the present invention;

30 Figure 2 is a block diagram of a slot server according to an embodiment of the present invention;

Figure 3A is a block diagram of an electronic gaming device according to an embodiment of the present invention;

Figure 3B is a plan view of the electronic gaming device of Figure 3A;

5 Figure 4A is a table showing components of the tracked symbol table;

Figure 4B is a table showing components of the occurrence table;

Figure 5 is a table showing components of the payout table;

Figure 6 is a table showing components of the probability table;

Figure 7 is a table showing components of the outcome table;

Figure 8 is a table showing components of the tracked symbol reward table;

10 and

Figure 9A-9B together comprise a flowchart illustrating a method for directing a slot machine to determine a bonus payout according to an embodiment of the present invention.

15 DETAILED DESCRIPTION OF THE INVENTION

Several embodiments of the present invention can motivate a player to prolong session play, e.g. in order to avoid losing accumulated credits. Such a game could, e.g. avoid the pitfalls of permitting lulls or quiescent periods where it appears that game play can be terminated without a significant loss of accumulated credits.

20 Embodiments of the present invention can provide an improved method and apparatus for determining a bonus payout based on a running count of tracked symbol occurrences. One possible advantage for a casino operator is to sustain the attention of slot machine players for longer periods of time, thereby increasing the average playing time for a slot machine. Another possible advantage for a casino operator is to encourage faster slot machine play by players. A possible advantage for a slot machine player is to increase the excitement, anticipation and enjoyment of playing a slot machine type game.

25 In embodiments of the present invention, a slot machine is directed to process a bonus payout based on a running count of tracked symbol occurrences. A bonus payout may be determined based on the running count.

Slot machines, including (electronic or mechanical) reel slot machines, video poker, video keno and video blackjack machines, are generally among the most profitable casino games. Casino operators can capture the interest of slot players by offering a bonus payout in addition to a traditional payout. By 5 determining the bonus payout based on aggregated results of multiple plays during a gaming session, casino operators can encourage slot players to increase the average duration of their sessions. Further, because the bonus payout is based on multiple plays, such a bonus increases the anticipation, entertainment and excitement of a slot player.

10 In various embodiments, an electronic gaming device determines whether a number of occurrences of a tracked symbol during a session of slot play is sufficient to provide a bonus payout. A count of unexpired tracked symbols that have occurred may be tracked. A bonus payout may also be determined after the running count reaches or surpasses a predetermined amount.

15 During a gaming session, the player plays a number of games, and generates an outcome for each game. Each outcome is represented by a set of symbols.

20 In one embodiment, a slot machine can identify at least one tracked symbol, and throughout the session, the slot machine can maintain a running count of the number of times the tracked symbol occurs in a generated outcome. The running count may represent, e.g. the number of times a specific symbol occurs in generated outcomes, the number of times any tracked symbol occurs in generated outcomes.

25 In one embodiment, each occurrence of a tracked symbol causes the running count to be increased. An expiration condition can be associated with each occurrence of a tracked symbol, thus defining the condition under which the occurrence expires. An expiration condition can be defined as, e.g. a function of time, a function of a number of plays. An expiration condition may be a function of a stored rule, and/or an event internal or external to game play, as discussed 30 more fully herein. Upon the satisfaction of an expiration condition, the running count can be decreased to reflect the expiration of an occurrence.

The preferred embodiment will be further described with reference to a client-server architecture in which much of the processing is performed by the networked gaming device. Of course, one skilled in the art will recognize various alternate embodiments that are consistent with the spirit and scope of the present invention, including without limitation performing some or all of the processing steps at the slot server.

## APPARATUS ARCHITECTURE

The apparatus architecture of an exemplary embodiment of the present invention will now be discussed with reference to Figures 1-3. Referring to Figure 1, there is shown a block diagram of a slot network 100. Network 100 includes a slot machine server 200 (hereinafter referred to as "server") that is linked to and communicates with networked gaming devices or slot machines 300, 302 and 304. Although three gaming devices are shown, a person of ordinary skill in the art will appreciate that any number of networked gaming devices could be linked to and in communication with server 200.

Referring now to Figure 2, the architecture of slot machine server 200 is illustrated. In addition to conventional server components, server 200 includes a processor 202, a storage device 204 and a communication port 220.

Communication port 220 enables server 200 to communicate with gaming devices 300, 302 and 304. Storage device 204 comprises an appropriate combination of magnetic and optical memory, such as disk drive memory, and semiconductor memory such as random access memory and read only memory. Storage device 204 contains program 206 and player table 208 for controlling server 200.

Referring now to Figure 3A, the architecture of slot machine 300 is illustrated. Slot machine 300, which is substantially similar to slot machines 302 and 304, is controlled by processor 302 and communicates with slot server 200 via communication port 348. Processor 302 is connected to storage device 304 which stores program instructions and data for operating slot machine 300 as described herein. Specifically, storage device 304 stores tracked symbol table 400, occurrence table 450, payout table 500, probability table 600, outcome table 700 and tracked symbol reward table 800, described more fully with reference to

Figures 4A-8, respectively. Storage device 304 further stores program 306 which preferably includes instructions for conducting a game of chance and instructions for implementing the method of determining the bonus payout, as described more completely with reference to Figure 9.

5 Further connected to processor 302 are a clock 308, a player card tracking device 338, a random number generator 322, a reel controller 324 for controlling reels 326, 328 and 330, a hopper controller 332 having an associated hopper 334, a currency acceptor 320, a video display 336 and a tracked symbol meter 360. It should be noted that video display 336 may display information which may serve  
10 as an adequate substitute for tracked symbol meter 360 as well as for reels 326, 328 and 330.

As illustrated, slot machine 300 comprises many conventional components. The non-conventional components of slot machine 300 include the program instructions and data stored in storage device 304 and the tracked symbol meter  
15 360. For purposes of better illustrating the invention, conventional components, well known to those skilled in the art, are described only briefly. Although the present embodiment of the invention is described as implemented with physical components, the invention applies equally well to and includes software embodiments such as would be implemented on the Internet and other computer  
20 data networks.

Processor 302 may be embodied as one or more well known processing units, for example a Pentium class CPU manufactured by Intel Corp., or the like. Data storage device 304 comprises an appropriate combination of magnetic and optical memory, such as disk drive memory, and semiconductor memory such as  
25 random access memory and read only memory. In addition to the program instructions and data shown in Figure 3, storage device 304 stores appropriate operating system and control software (not shown), functional to operate gaming device 300 in the manner described below. Random number generator 322 comprises one of many well known random or pseudo-random number generators  
30 suitable for use in a gaming device.

Currency acceptor 320 is operative to receive one or more coins or bills, and to transmit an appropriate value signal to processor 302. Hopper controller

332, and hopper 334 connected thereto, are operative under the control of processor 302 to dispense coins to a player. Starting controller 350 comprises a player-operated device such as a handle or button for initiating the play of a game.

Player card tracking device 338 comprises a player tracking interface 5 including a card reader/writer 346 for receiving a player tracking card (not shown), a display 344 for communicating messages to the player, and a keypad 342 for receiving player input such as a player identifier.

Referring now to Figure 3B, a front plan view is shown of slot machine 300 which, for purposes of discussion, is generally divided into three sections: a central panel 370, a lower panel 380, and an upper panel 390. Central panel 370 includes the display of first reel 326, second reel 328, and third reel 330. Each of these reels is configured to display the symbols printed on an associated reel strip. The reels may be mechanical in nature, or electronically represented with outputs shown on conventional electronic displays, such as a liquid crystal display ("LCD"). Central panel 370 includes a payline 372 that indicates the symbols of a resultant outcome. Central panel 370 further includes starting controller 350, in the form of a handle.

Lower panel 380 houses player tracking device 338. To the right of player tracking device 338 is tracked symbol meter 360 which indicates the number of tracked symbols which have been accumulated by the player. On the right portion of lower panel 380 is currency acceptor 320 and starting controller 350.

Upper panel 390 includes a display showing the contents of payout table 500 which describes all possible payouts for the slot machine, the details of which are discussed with respect to Figure 5. The information is typically printed in bright colors and may be back-lit for easier viewing. Upper panel 390 also includes a display showing the requirements and payouts of the bonus game.

## DATA TABLES

Referring now to Figure 4A, there are illustrated three representative records of an exemplary tracked symbol table 400. As illustrated, each record of tracked symbol table 400 represents the progress of a player toward achieving a bonus associated with a tracked symbol. Each record of tracked symbol table 400

includes a symbol 410 and a count 412. Symbol field 410 identifies the tracked symbol associated with the record, and running count field 412 identifies the number of non-expired occurrences of the symbol generated during a session. Accordingly records 420, 430 and 440 of tracked symbol table 400 show that 5 during the current session of play, a player has an active total of 12 bell symbols, 29 orange symbols and 2 bar symbols, respectively. The displayed running count for each tracked symbol is periodically adjusted to account for expired occurrences of tracked symbols.

Referring now to Figure 4B, there are illustrated ten representative records 10 of an exemplary occurrence table 450. Each record of occurrence table 450 represents a single occurrence of a tracked symbol generated during a session. Each record of occurrence table 450 includes occurrence identifier field 452 which uniquely identifies a record. Symbol field 454 identifies the tracked symbol associated with the record.

15 The time and date that the symbol was generated is stored in occurrence time/date field 456, and time at which the occurrence expires is stored in expiration time/date field 458. Although the expiration time/date is illustrated as an expiration condition, other expiration conditions are also possible, such as number of plays. As illustrated by the records of occurrence table 450, ORANGE symbols 20 expire twenty minutes after occurring, BAR symbols expire twenty-five minutes after occurring and BELL symbols expire thirty minutes after occurring. Expiration conditions may be recorded in tabular format as illustrated by Table I, below, and stored in storage device 204 and/or storage device 304.

Table I: Expiration Condition Table

Symbol	Expiration Period (minutes)
Orange	20
Bar	25
Bell	30

Although the exemplary records reflect expiration periods that are based on the associated tracked symbol, random expiration periods could be assigned for every occurrence.

Status field 460 represents the status of the occurrence represented by a record. Status field 460 can store an indication of "ACTIVE" or "EXPIRED." If status field 460 contains "ACTIVE," the occurrence is included in the running count for the associated symbol. If status field 460 contains "EXPIRED," the occurrence of the symbol is not included in the running count. Assuming that clock 308 generates the current date/time of 9/28/98 12:25 pm, as illustrated by reference numeral 490, records 470 and 472 illustrate the use of status field 460. As shown, the occurrence represented by record 470 expired at 12:24 pm, one minute prior to the current date/time. Accordingly, status field 460 of record 470 is set to "EXPIRED." Similarly, the occurrence represented by record 472 will expire at 12:29 pm, four minutes from the current date/time. Thus, status field 460 of record 472 is set to "ACTIVE."

Referring now to Figure 5, there is depicted an exemplary conventional payout table 500. Each record of payout table 500 defines the payout awarded for each outcome, or family of outcomes, based on the number of coins wagered. Payout table 500 includes outcome field 502 representing the outcome or family of outcomes associated with a record. Payout table 500 also includes payout fields 504, 506 and 508 representing the payouts for wagers of one, two and three coins, respectively. For example, if a player wagers one coin on a play that results in an outcome of "BAR/ORANGE/ORANGE," slot machine 300 would provide a payout of ten coins, according to payout field 504 of record 522. If two coins were wagered on a play having the same outcome, slot machine 300 would provide a payout of twenty coins, according to payout field 506 of record 522.

Referring now to Figure 6, there is depicted a table representing the probability of specific outcomes generated by slot machine 300. Although the present invention does not rely on any specific probability table, the selection of a probability table should be consistent with the requirements and payout amounts of the bonus game. Each record of probability table 600 represents an outcome or family of outcomes. Probability table 600 includes an outcome field 602

representing an outcome associated with a record. Probability table 600 further includes random number field 604 and expected hits per cycle field 606. Random number field 604 indicates a range of numbers which, when generated by random number generator 322, result in the associated outcome. For example, random 5 numbers 10131-10330 correspond to outcomes for which the last two symbols are "CHERRY," as illustrated by record 616. Outcomes of "ANY/CHERRY/CHERRY" are expected to occur 200 times per cycle of 10,648 total plays in the cycle.

Referring now to Figure 7, there is depicted outcome table 700 of slot 10 machine 300. Each record of outcome table 300 represents an outcome generated by a play of slot machine 300. Although outcome table 700 may store every outcome from every session, in the illustrated embodiment, outcome table 700 stores the outcomes from every play of a current session. Outcome table 700 includes outcome identifier 702 that functions as a record identifier. Outcome 15 table 700 also includes fields 704, 706 and 708 that represent the symbols from reel 1, reel 2 and reel 3, respectively, which together form the outcome.

Referring now to Figure 8, there is depicted tracked symbol reward table 20 800 of slot machine 300. Each record of table 800 represents a bonus payout and the requirements for achieving the bonus payout. Table 800 includes symbol field 810 and count required field 812. Symbol field 810 and count required field 812 define the requirements for achieving a bonus payout associated with a record. Bonus payout field 814 defines the amount of the bonus payout awarded to a 25 player who achieves the associated requirements.

## OPERATION

Having thus described the architecture and components of the slot network and slot machines of the preferred embodiment, the operation of the apparatus will now be described in greater detail with reference to Figures 9A and 9B. Taken together, Figures 9A and 9B depict a flowchart of an exemplary process 900 30 employed by slot machine 300 to determine a bonus payout. The process steps are implemented using the instructions of program 306.

The process begins with step 902 in which processor 302 receives a signal to initiate a session. Such a signal could be generated as a result of a player inserting a player tracking card. The session initiation signal could also be generated based on insertion of currency after an extended period during which the slot machine was not used. The session initiation signal represents the beginning of a new session.

The process continues with step 910 which directs processor 302 to receive a signal to initiate game play, such as by a pull of handle 350. At step 912, processor 302 determines an outcome for the game and provides the player a payout associated with the outcome, as shown by step 914. Steps 910-914 are game play steps which may be performed in conjunction with certain operating system and control software (not shown) to conduct the primary game offered by slot machine 300.

Steps 916 through 922 define a logical loop that causes each reel of the slot machine to be examined to determine whether the outcome includes any tracked symbols. At step 916, processor 302 determines which symbol is on the next reel that has not been examined. The first time through the loop, the first reel 326 is considered the next reel that has not been examined. Step 918 directs the flow of processing based on whether the determined symbol is a symbol which is tracked for the purpose of awarding a bonus payout. If the determined symbol is a tracked symbol, processor 302 is directed to update the running count of the tracked symbol. Otherwise, processor 302 determines whether all of the reels have been examined, and causes the process flow to loop back to step 916, accordingly.

Referring now to Figure 9B, steps 924 through 936 define a logical loop that causes processor 302 to examine the running count of each tracked symbol to determine whether a reward level has been achieved. At step 924, the running count 412 of a tracked symbol is retrieved from tracked symbol table 400 and compared to the corresponding count required 812 of tracked symbol reward table. As illustrated by step 926, if a reward level has not been achieved, processor 302 is directed to proceed to step 936.

If a reward level has been achieved, processor 302 determines the reward at step 928 and provides the reward to the player at step 930. The reward is

determined by retrieving the corresponding bonus payout 814 from tracked symbol reward table 800. The reward may be provided to the player in a number of ways, including dispensing coins, updating a credit meter, or crediting an account of the player based on identifying information stored on a player tracking card.

5 At step 932, processor 302 adjusts the running count of the tracked symbol to reflect the reward. In its simplest form, step 932 includes subtracting the count required to achieve the reward from the corresponding running count. Alternately, step 932 could include setting the running count to zero, or in an embodiment in which each occurrence is individually tracked, step 932 would include updating the 10 table of occurrences 450. At step 934, processor 302 is directed to adjust the running count of the tracked symbol to reflect expired occurrences. At step 936, processor 302 is directed to continue examining tracked symbols until all tracked symbols have been examined.

At step 938, processor 302 determines whether the session has been 15 terminated. If the session has not been terminated, process flow is directed back to step 910. Otherwise, the process concludes. The determination of whether a session has been terminated may be made in any number of ways, including detecting the removal of a player tracking card from player tracking device 338. Alternatively, slot machine 300 may determine that a session has been terminated 20 after an extended period of inactivity.

## VALUE OF TRACKED SYMBOLS

Many embodiments of the present invention are possible. One series of 25 embodiments addresses the valuation of tracked symbols for purposes of affecting a player's ability to qualify for a bonus payout. In embodiments where winning the bonus requires accumulation of a sum of values, different tracked symbols can be assigned different values. For example, the bonus payout may require accumulation of 50 points, where cherries are worth 1 point each, oranges are worth 2 points each, bells are worth 10 points each, and bars are worth 15 points 30 each. Or, the bonus game may be presented on an accompanying visual display as an automobile or horse racing game, where different reel symbols affect a player's standing in the race. Reel symbols and the values they represent may dictate the

distance traveled or speed attained by a player's car or horse (e.g. a bell symbol advances the player's car 1/10 of the track length, while a bar symbol advances the player's car 1/7 of the track length). Conversely, the reel symbols and the values they represent may negatively affect the player's standing in the race, for example

5 by indicating gas consumption, a flat tire or a pit stop. Negative symbols could temporarily or permanently reduce or eliminate the player's ability to compete against (1) "virtual" cars or horses (operated automatically by server 200 or the gaming device) or (2) the cars or horses associated with players at other gaming devices. For example, the game may dictate that should a player receive a "7"

10 symbol, a flat tire results, forcing the player's car to cease racing until either 15 seconds pass or until 2 more spins are initiated. This example illustrates that relatively greater payouts normally accompanying infrequent outcomes (e.g. "7's") can be offset by imposing a negative effect on the player's standing toward the bonus payout. Further, where the player's ability to re-enter the race is dependent

15 on an increased rate of play, the casino benefits as players will likely spend more money at quicker rates.

Alternatively, where the game requires accumulation of a certain amount of points but only allows for accumulation of a single symbol-type (e.g. cherries), the symbol may be awarded differing point values depending on (1) point of time in

20 the game session (e.g. lower points may be awarded later in the session), (2) the outcomes and payouts generated in the underlying game (e.g. lower points may be awarded if the player has received a certain number of winning outcomes during the game session), (3) the reel position in which the symbol was generated (e.g. if a cherry symbol is in the third reel, 10 extra points are awarded), (4) the occurrence

25 of supplementary symbols in a given outcome (e.g. cherries accompanied by bars are awarded 10 extra points).

In yet another alternate embodiment, the value of accumulated tracked symbols may vary over time according to predetermined rules. Thus, in a game requiring accumulation of an apple symbol, an orange symbol, and a pear symbol,

30 the value of the first two symbols accumulated may vary until a completing symbol is obtained, at which point a sum value can be determined and a payout awarded accordingly. For example, apple symbols may have values that at first increase by

one value point every 5 seconds for the first 30 seconds after they are initially accumulated, and then decrease thereafter at a rate of one value point every 5 seconds until the value reaches zero, or until the game ends (whichever comes first). Orange symbols may have values that at first increase by five value points 5 every 10 seconds for the first 60 seconds after they are initially accumulated, and then decrease thereafter at a rate of ten value points every 20 seconds until the value reaches zero, or until the game ends (whichever comes first). Pear symbols may have values that at first increase by ten value points every 5 seconds for the first 20 seconds after they are initially accumulated, and then decrease thereafter at 10 a rate of five value points every 10 seconds until the value reaches zero, or until the game ends (whichever comes first). In this manner, every fruit symbol in the game “ripens” and “perishes” at different rates. Depending on the when the player completes the game by accumulating all of the required tracked symbols (in the above example, one apple, one orange, and one pear), the total value of the 15 player’s points are effected. Accordingly, players accumulating the symbols at different times during a game session will receive differing total point values, and may be awarded different bonuses.

#### EXPIRATION OF TRACKED SYMBOLS

20 In one embodiment, each occurrence of a tracked symbol has an associated expiration criterion. As described, each accumulated tracked symbols expire after a predetermined time. An advantage of a time-based embodiment is that it encourages players to play quickly. Although fast players will tend to win more bonuses, they will also tend to spend more money playing the slot machine.

25 Alternatively, accumulated tracked symbols may expire after a pre-determined number of plays. For example, after 100 plays, a bell symbol expires. In either event, the accumulation of tracked symbols allows players to feel that increased game play will result in a reward if such accumulation meets a predetermined level, while the expiration of tracked symbols serves to make attainment of the 30 predetermined level more difficult, thereby allowing for larger payouts, increasing excitement, and encouraging additional game play. The accumulation and expiration of tracked symbols may be represented to the player visually, for

example, by (1) images representative of the tracked symbols which visually “decay” or “perish” in accordance with expiration status, (2) images representative of tracked symbols which visually accumulate as part of a pyramid (or other structure) and gradually disappear or are removed to reflect expiration, or (3)

5 images representative of the tracked symbols and corresponding images of clocks or other timers indicating the images’ individual expiration statuses.

In an alternate embodiment, accumulated tracked symbols may have individual expiration rules so that such symbols expire at different rates. In another alternate embodiment, the expiration periods of each accumulated tracked

10 symbol may be effected positively (i.e., prolonged) or negatively (i.e., shortened), in varying degrees, by certain events. For example, the outcomes and payouts associated with the underlying slot game may prolong or shorten expirations associated with accumulated symbols. Thus, the occurrence of any payout over \$100 may cause an accelerated rate of expiration for any or all of the collected

15 symbols. Or, the simultaneous occurrence of two “bar” symbols in any position on the pay line may prolong the expiration periods of certain accumulated symbols (e.g. by adding 10 minutes to the expiration dates of the first 5 symbols acquired in the gaming session).

Further, “opponents” that a player may face in a game may effect

20 expiration periods positively or negatively. That is, the expiration periods of certain accumulated symbols may be prolonged or shortened based on the activities of other, competing players. In an embodiment where slot machines are connected via network, the outcomes of other games may effect the expiration periods associated with a player’s session. For example, players in a neighboring bank of

25 slot machines may compete for a single bonus prize, such as an automobile. Players may receive outcomes that shorten the expiration periods associated with symbols accumulated by other players, thereby increasing the player’s standing in the game relative to the competing players. Similarly, a player’s game may be effected by a “virtual” opponent, such as a game character controlled by server

30 200.

Alternatively, the expiration periods of certain symbols may be effected positively or negatively based on the occurrence or nonoccurrence of events

external to the game. In such an embodiment, a real-time data link can be established between communication port 220 of server 200 and a remote server configured to provide data about the relevant external event. Example external event data that may effect the expiration periods of accumulated tracked symbols 5 include (1) weather data, (2) financial (e.g. securities) data, and (3) data reflecting outcomes or payouts of other games. It should be noted that, in a similar manner, external event data may also effect the value of certain symbols, such as a point value.

In an alternative “front-loading” embodiment, relatively faster 10 accumulation of symbols may occur in the earlier portion of a game session and relatively slower accumulation of symbols in the later portion of the game session. In this embodiment, the aforementioned expiration function may or may not be desirable, as expiration in conjunction with front loading would significantly decrease the likelihood of the player winning a bonus. Front-loading 15 configurations function to give players the impression that large jackpots are readily attainable, when in fact it becomes increasingly more difficult to attain. In other words, such a front-loading configuration would increase the anticipation and excitement of the game because the player would believe that he is on the verge of a bonus payout. In practice, casinos may wish to disclose the use of front-loading 20 to players prior to the initiation of a game session so that they are not disappointed after game session has begun.

Accelerated accumulation earlier in the game can be achieved by 25 configuring the game such that certain required symbols are more likely to occur than other required symbols. For example, in a game that requires the player to collect 20 oranges, 20 cherries and 20 bells, the player may sense more progress earlier in the game as the collection of more common symbols (cherries and oranges) occurs more frequently. However, as the game goes on, the player would realize that accumulation of the less common symbols (bells) requires a relatively prolonged session.

30 Alternatively, in a front-loading embodiment where there is one symbol that must be accumulated (e.g. the player must collect 50 oranges), the machine may be configured to provide those outcomes less frequently after a certain amount

of time (e.g. after the first hour of play), or after a certain number of occurrences (e.g. after 25 oranges have been collected). Or, the odds of the symbol's occurrence in a game outcome may remain unchanged, but the rate at which the symbol is credited toward the bonus payout may decrease. For example, in such a 5 game that requires accumulation of a single symbol type (e.g. an orange), the accumulation of the symbols can be visually communicated to the player via a digital representation of a pyramid that is assembled throughout the game session. If the player is required to collect 50 oranges in order to qualify for a bonus, 10 collected oranges may fill the bottom portion of the pyramid earlier in the game session. Later in the game session, when outcomes resulting in oranges are less likely to lead to accumulation of oranges for bonus payout purposes, oranges that result from game play are less likely to stay on top of the pyramid. In other words, as the pyramid gets higher, game outcomes may result in oranges, but such oranges may "roll off" the sides of the pyramid and not be credited toward the achievement 15 of a bonus payout. In this manner, the probability table of the underlying slot game need not be changed to accommodate front-loading in the bonus game.

## STORAGE OF RUNNING COUNTS

Although running counts might be stored locally at the slot machine, the 20 running counts could be associated with a player identifier from a player tracking card and stored by server 200 to allow a player to "carry" the running counts from slot machine to slot machine. Occurrences of tracked symbols stored with the server might expire after a number of hours or days. Such an embodiment also enables a player to end a playing session, save the running counts, and return to the 25 same machine at a later time to resume the game using the stored running counts.

Alternatively, the running counts of accumulated tracked symbols could be stored on the player's tracking card. Such an embodiment would also allow a player to carry running counts from slot machine to slot machine. Any existing running counts would be stored on a player's tracking card at the end of a playing 30 session. The running counts would be read off the card by the next slot machine into which the tracking card is inserted. That machine's running counts would be

adjusted accordingly. This embodiment requires that the player card have data storage capability, such as that found in a smart card or writable magnetic strip.

## ALTERNATE REWARDS

5        In addition to variations in the expiration of accumulated tracked symbols, variations in determining a bonus payout are also possible. Specifically, the determination of a bonus payout could be based on how many spins or how much time it took to achieve the reward level. For example, the bonus payout for accumulating 100 oranges may be 350 coins if they are accumulated within 30 10      spins, 325 coins if they are accumulated within 40 spins, and 300 coins if they are accumulated within 50 spins.

15      Alternatively, the reward provided to a player for attaining a particular reward level might be a payout multiplier instead of coins. For example, upon reaching 50 oranges, the player might earn a ten times multiplier for "ORANGE/ORANGE/ORANGE" enabled for the next 100 handle pulls. In yet another embodiment, slot club reward points could be awarded in place of currency.

20      Rewards could also be provided for expiring occurrences of tracked symbols. For example, every time a tracked symbol expires (i.e. is deducted from the running count), the player would be awarded a slot club reward point, a percentage of a slot club reward point or a cash-back reward (e.g. \$0.01). The reward point or cash-back could then be used in the casino restaurants and/or shops. This extra reward would make the gaming experience more enjoyable by rewarding the player for events that would otherwise be considered "non-winning" 25      events during slot play. The reward point or cash-back earned by the player would be tracked through the player's tracking card in a conventional manner.

30      As another alternative reward, players may be provided with the option of foregoing a bonus in exchange for credit in a new gaming session. For example, a player who has accumulated all necessary symbols and accordingly qualifies for a bonus from an initial game session may be offered the ability to apply half of their accumulated symbols to a new game session offering a larger, more valuable bonus if they agree to forego the bonus due from the initial game session. In another

embodiment, players are simply awarded the initial bonus, and issued a credit toward the accumulation of bonus symbols in the next game session. Such an embodiment would encourage players to keep playing a game after the attainment of the initial bonus.

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## GROUP/TEAM PLAY

Although the described embodiment is directed toward individual play, it should be understood that an alternate embodiment supports group play. Players could form teams, pooling their accumulated tracked symbols into running counts corresponding to the team. Once the once a reward level is achieved by the team, each team member would be provided a share of the associated bonus. A team may be formed interactively by allowing the player to actuate a "Team Play" button on the gaming device (not shown). Server 200 would link the player to at least one other player in response to the signal resulting from the actuated "Team Play" button.

Alternatively, players may form teams by registering at a kiosk or casino slot club center. In such an embodiment, the player identifiers of the team members would be stored in association with one another and a team identifier in a registration table. The registration table would be accessed when a team member inserts his tracking card into the card reader of a slot machine. The slot would read the player identifier from the player tracking card and transmit it to the server. The server would determine whether the player is registered on a team and, if so, would retrieve the team record in order to update any symbols accumulated by the player into the running counts of the team.

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## RULES VARIATIONS

The slot machine according to several embodiments could also include program steps for alternate rules. Specifically, each tracked reel symbols could be associated with a particular reel. For example, on a three reel machine, only bars occurring on the first reel would be accumulated, only bells appearing on the second reel would be accumulated and only oranges appearing on the third reel

would be accumulated. A tracked symbol meter could be disposed above each reel for visual association.

Other variations of the disclosed embodiment are also envisioned. Specifically, an alternative embodiment of the present invention could require that 5 a tracked symbol only count towards the running count if it is not part of a winning combination. Since the present invention is directed toward rewarding players in some way even when their outcome is not a winning one, it is not strictly necessary to reward players a second time for a winning outcome to achieve the objects, features and advantages of the present invention. For example, if bars, bells, and 10 oranges are tracked symbols, and the player receives an outcome of CHERRY-CHERRY-ORANGE, he receives a payout of five coins for every coin wagered in accordance with a conventional payout schedule. Employing an embodiment of the present invention, the player would receive the payout of five coins (if he only wagered one coin) and the orange that is part of that outcome would not be added 15 to the running count of oranges.

Other variations in the rules are also possible. For example, the rules could be altered to adjust the running count only if the player has wagered the maximum amount allowable. Another variation of the rules may enable a player to receive credit for an occurrence of a tracked symbol, even if it is not part of an outcome. 20 Specifically, symbols that are not on the payline but appear on the screen of the slot machine count towards the running count. For example, if an orange is just above or below the payline and oranges are tracked symbols, the running count for oranges would be adjusted.

Another variation of the rules includes cancellation of symbols. In this 25 embodiment, one type of reel symbol may cancel another. In other words, one type of reel symbol may decrease the running count of another reel symbol. For example, a cherry may cancel an orange. Accordingly, if an orange is a tracked symbol, and the running count of oranges is twenty. A player receiving an outcome of CHERRY-7-7 would find his orange balance decreased by one to 30 nineteen.

A further variation of the rules include modification of symbol values. In this embodiment, one type of reel symbol may modify the value associated with

another reel symbol. In other words, one type of reel symbol may reduce or add to (e.g. multiply) the value of another symbol. For example, the occurrence of a “7” symbol may serve to reduce the value associated with a cherry symbol such that the accumulated cherry symbol expires in half the time that it otherwise would.

5 Yet another variation of the rules includes providing a bonus payout for achieving a certain combination of tracked symbols. For example, a bonus payout of fifty coins could be awarded if each of the running counts is equal to ten simultaneously. In another example, a bonus payout of fifty coins could be awarded if a specific running count exactly matched a required count. The  
10 particular number that the running counts would have to equal could be determined by the casino or selected by the player using the keypad 342.

Still another variation of the rules includes displaying special offers to the player upon achieving a predetermined reward level. Such offers could include a free night’s stay at the casino hotel, a ticket to a show or other casino event or a  
15 free dinner at the casino restaurant. The offers could be determined by the server and be based on revenue-management rules in order to optimize the revenue of the casino. For example, a show starting in a couple of hours may have a large number of empty seats which the casino would rather give away than have them remain empty. The server may determine these offers by checking databases of  
20 reservations for the casino hotel or show. The offers may be made upon achieving the predetermined reward level (e.g. “Collect 50 Plums to Win a Free Room!”) in place of the monetary award. Alternately, the reward offers could be made when the player is close to achieving the sought after balance (e.g. has 48 plums accumulated). Depending on the reward, it may be more cost effective for the  
25 casino to make the offer rather than pay a monetary reward to the player if he does get to the sought after level. If the player accepts the offer, his balance would be reset to zero.

#### VIDEO POKER EMBODIMENT

30 The present invention and many of the disclosed variations thereon may be applied to video poker, as well as to slot machines. As in the slot machine embodiments, in a video poker embodiment, a player achieves a running count to

earn a reward. The running count is preferably a count of occurrences of types of cards. A type of card may be a specific card value (e.g., aces, twos and threes), a set of card values (e.g., face cards) or a particular suit (e.g., hearts, diamonds, spades and clubs).

5 In the case where the tracked card types are suits, an exemplary video poker tracked symbol reward table is illustrated as Table II below. Of course, the expiring nature of the card types would apply in the same ways as described with respect to the slot machine embodiments.

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Table II: Video Poker Tracked Symbol Reward Table

Suit	Count Required	Bonus Payout
Hearts	100	200
Clubs	150	250

15

In an alternate embodiment, a running count may be adjusted based on the numeric card values (e.g., face cards are valued at ten, aces are valued at eleven). Regardless of what a running count represents, there are many variations regarding how to adjust the running count in a video poker embodiment. Specifically, there are several ways to determine whether an occurrence of a card type has been generated.

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For example, all cards displayed during a game (including discarded cards) could be examined to determine whether a card type occurrence has been generated. In other words, every card displayed during a game is considered in the decision to adjust the running count. In an alternate embodiment, the cards examined to determine whether a card type occurrence has been generated may be limited to only the cards of the final outcome. In such an embodiment, only the cards comprising the final hand are considered in the decision to adjust the running count. In yet another embodiment, only certain card positions may be examined to determine whether an occurrence of a card type has been generated. For example, only the cards displayed in the first card position might be considered in the decision to adjust the running count. Of course, other ways to determine

occurrences of tracked symbols in a video poker embodiment are also possible, such as by examining only discarded cards.

#### Additional Bonus Game Formats

The present invention and many of the disclosed variations thereon may be applied to enable other bonus game formats. For example, the present invention may be applied to a Bingo game format, in which players must collect certain pieces of a game board in order to win. In such a Bingo embodiment, collected board positions may expire as discussed above, making it more difficult for players to win the Bingo bonus game. Similarly, Scrabble ® and Wheel of Fortune ® game formats are contemplated, in which players must assemble words from letters generated by game outcomes. In such an embodiment, collected letters may expire as discussed above, making it more difficult for players to complete words and thereby score points in the bonus game.

Likewise, a video game format is contemplated in which the object is to break through a representation of a wall, such as the wall to a bank's vault. Certain game outcomes could result in destruction of the wall, and expiration as discussed previously could be represented as the rebuilding of the wall.

Further, an "egg timer" game format is contemplated in which players must accumulate visual representations of eggs and continue playing until they are "cooked" such that each cooked egg is potentially awarded with a bonus. In such an "egg timer" game, the prospect of winning a bonus would encourage players to prolong play until eggs are cooked. It should be noted that such an "egg timer" game in essence serves to achieve the same purpose as the above-described "expiration" concept, to wit encouraging players to play for longer periods of time, but does so by presenting the time-based requirement as an "affirmative" prerequisite to bonus eligibility (i.e., the eggs must cook for a predetermined amount of time) rather than as a "negative" prerequisite to bonus eligibility (i.e. a threshold number of accumulated symbols must not expire).

While the best mode for carrying out the invention has been described in detail, those familiar with the art to which the invention relates will recognize various alternative designs and embodiments for practicing the invention. These alternative embodiments are within the scope of the present invention.

Accordingly, the scope of the present invention embodies the scope of the claims appended hereto.